UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

000453

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

DATE: December 29, 1980

SUBJECT: Thiabendazole Concentrate
EPA File Symbol 43410-U

FROM: Sherell A. Sterling
FHB/TSS

TO: Henry Jacoby
Product Manager (21)

Applicant: Agri-Chem, Inc.
P.O. Box 17477
Orlando, FL 32860

Active Ingredient:
2-(4-thiazolyl)benzimidazole 3.0%
Inert Ingredients 97.0%

Background: An application for conditional registration was submitted under the "alternate" method of support. An Acute Oral, Acute Dermal, Eye and Skin Irritation studies were submitted. These studies were conducted by Tox Monitor Laboratories, Inc. of Melrose Park, Illinois. The studies used "Thiabendazole Concentrate" as the test substance.

Recommendations:

1. The Acute Oral study is considered Core Supplementary Data and, as such, is not adequate for conditional registration purposes. Please note the following:

   a. Equal numbers of males and females must be tested at each dosage level.

2. The Acute Dermal study is considered Core Supplementary Data and, as such, is not adequate for conditional registration purposes. Please note the following:

a. Equal numbers of males and females must be tested at each dosage level.

b. When testing only at one dosage level, only 2 g/kg of the test substance is required.

c. When testing only at one dosage level, all animals should have abraded skin.

3. An Acute Inhalation study was not submitted. This study is necessary to complete the battery of required human safety testing. Please see section 163.81-3 of the "Proposed Guidelines for Human Hazard Evaluation" (copy enclosed) for details concerning this test.

4. The Eye Irritation study is considered adequate and acceptable for conditional registration purposes. Please note for developing future eye irritation testing protocols that an additional group of 3 animals that are treated and subsequently lavaged must also be tested. Please see section 163.81-4 of the "Proposed Guidelines" for additional information.

5. The Skin Irritation study is considered adequate and acceptable for the conditional registration of this product. However, please note that four sites (2 abraded and 2 intact) must be tested on each animal.

Comments:

1. If the Acute Oral study is rerun so that the LD50 for females is within the same range as for the males, the Acute Dermal study may be upgraded to Core Minimum Data.

Labeling Recommendations:

1. No substantial revisions are necessary at this time. However, please note that when additional data are submitted, labeling revisions may be required.

2. Under the "Environmental Hazards" section, the statement "Keep out of lakes, streams or ponds" may be replaced with "Do not apply directly to lakes, streams or ponds."

Review:

1. Acute Oral Toxicity; Tox Monitor #80-209; May 19, 1980; Acc. No. 243753

Procedure: Male Sprague-Dawley rats received oral dosages of "Thiabendazole Concentrate" by intubation. Animals were observed for 14 days post-application. At termination of studies, survivors were sacrificed and necropsied.

Results: At 2.5 ml/kg, 0/4 M died; at 5.0 ml/kg, 1/4 M died; at 10 ml/kg, 1/4 M died. All animals appeared normal. Necropsy revealed all organs of thorax and abdomen were normal. LD50 greater than 5 ml/kg (~4.99 g/kg).

Study Classification: Core Supplementary Data. Only M subjects tested.

2. Acute Dermal Toxicity, Tox Monitor #80-209; November 3, 1980; Acc. No. 243755

Procedure: 3M, 3F New Zealand white rabbits each received a dose of 5 ml/kg of "Thiabendazole Concentrate" under occlusive wrap. Exposure was for 24 hours. Animals were observed for 14 days. All survivors were sacrificed and subjected to necropsy.

Results: No mortalities reported. All rabbits appeared normal throughout study. Necropsy revealed organs of thorax and abdomen to be "normal." The LD50 greater than 5 ml/kg (~4.99 g/kg).

Study Classification: Core Supplementary Data. Only M subjects used. Animals with abraded skin should have been tested.

3. Eye Irritation: Tox Monitor #80-209; October 10, 1980; Acc. No. 243754

Procedure: 6 New Zealand white rabbits each received 0.1 ml of "Thiabendazole Concentrate" in one eye. Treated eyes were scored using Draize's method at 24, 48, 72 hours; 7 and 14 days.

Results: At 24 hours, the only irritation scores noted were conjunctival redness in 6 6=1 and swelling in 2/6=1. All scores were zero by day 7.

Study Classification: Core Minimum Data. An "eyewash" group was not tested.

Toxicity Category: IV-CAUTION

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4. Primary Skin Irritation; Tox Monitor #80-209; October 10, 1980; Acc. No. 243756

Procedure: Six M albino rabbits each received 0.5 ml of "Thiabendazole Concentrate" at each of 2 sites (1 abraded, 1 intact). Sites were scored at 24, 72 hours.

Results: At 24 hours, abraded sites showed erythema in 1/6=1, 5/6=2 and edema in 5/6=1; at intact sites 4/6=1, 2/6=2 with erythema and 5/6=1. At 72 hours, abraded sites in 3/6=1 with erythema at intact sites. The Primary Irritation Index was 1.41.

Study Classification: Core Minimum Data. Four sites must be tested per animal.

Toxicity Category: IV-CAUTION